

THEORETICAL AND METHODOLOGICAL FOUNDATIONS OF OPTIMIZATION OF THE TRAINING PROCESS AND STRATEGIES FOR TRAINING STUDENT-ATHLETES OF HIGH QUALIFICATION IN TEAM SPORTS

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Abstract. *The article discloses the main theoretical and methodological foundations of optimization of the training process and strategies for training student-athletes of high qualification in team sports. Team sports are particularly popular in Olympic and professional sports. The modern system of sports training is characterized by progressive principles, a wide range of interdependent tasks, scientifically based selection of means and methods, promising long-term planning, high organization of control, provision of hygienic conditions, etc. The purpose is to substantiate and experimentally test the theoretical and methodological foundations of optimizing the training process and the strategy of training student-athletes of high qualification in team sports on the basis of theoretical and practical analysis of the problem under study; to develop the content of the training process of student-athletes of high qualification in team sports. To achieve the goals, the following methods are used: verbal, visual and practical. These methods are most often used to optimize the training process and training strategy for highly qualified student-athletes in team sports. Also, we describe the methods of optimizing the training process and strategies for training student-athletes of high qualification in team sports, which are divided into general pedagogical, specific, additional methods that are specially developed for the needs of sports practice and optimization of the training process. The content of the training process of student-athletes of high qualification in game sports has been developed, which allows purposeful planning and adjustment of tactics and strategy of training student-athletes in team sports on an objective basis, can be used in higher educational institutions that train student-athletes, and can also be concluded in textbooks and methodological recommendations.*

Keywords: *game sports, higher education institutions, student-athletes, training process.*

Introduction

Relevance of the study. The modern system of sports training is characterized by progressive principles, principles and a wide range of interdependent tasks, scientifically based selection of means and methods, promising long-term planning, high organization of control, provision of hygienic conditions, etc. Sports training of student-athletes should fully reflect the very process of sports training, which is characterized by goals, objectives, means, methods, principles, sides and directions sports training, as well as the structure of the training process.

The creation of conditions for the development and improvement of individual abilities is regulated by official program documents: "On Amendments to the Law of Ukraine "On Physical Culture and Sports" regarding the activities of the Sports Student Union of Ukraine and the Ukrainian Federation of Student Sports" (2020), the Law of Ukraine "On Physical Culture and Sports" (2023), "On Approval of the State Target Social Program for the Development of Physical Culture and Sports for the Period up to 2024".

The issues of construction and content of the training process for the training of highly qualified student-athletes in recent years have been at the stage of intensive development, which is associated with the availability of a large amount of information on the use of modern directions of optimization of the system of management and control of the training of student-athletes in countries of the world with a developed system of sports industry. The active development of sports science, the widespread use of modern technologies, the objectification of knowledge, a systematic approach, the achievement of scientific and technological progress create all the prerequisites for further improvement of the training system in domestic sports as a whole.

Literature Review

Fundamental scientific research in the field of Olympic and professional sports (Burla, 2017; Krutsevych, 2005), students' motivation for physical education and the level of physical fitness (Prontenko et al., 2019) convincingly testify that the best results are achieved by teams that, firstly, are staffed with high-class athletes and coaches, secondly, with scientifically based management of training and competitive processes, and thirdly, have a modern material and technical base and the necessary level of financial support.

This statement adequately reflects the formation of the directions of scientific research that have been carried out recently in team sports games, as well as in the field of Olympic and professional sports in general. A significant part of the research is devoted to the theory and methods of training athletes (Kostyukevich, 2014; Shynkaruk, 2013); the theory of sport (Mudryk,

Dobrynskyi & Dedelyuk, 2018); physical training of an athlete (Platonov & Bulatova, 1995); professional orientation of training specialists in physical education (Kostyukevich, 2016; Tymchyshena, 2008; Vilchkovskyy, 2002).

The optimization of the training process and the strategy of training student-athletes of high qualification are based on the general theoretical principles of training in the competitive period and at the stage of direct preparation for participation in the main competitions (Kostyuevych, 2014; 2016). In these structural formations of the macrocycle, the implementation of management functions is significantly related to the control of technical and tactical actions of athletes, the choice of means and methods of their improvement, the assessment and analysis of game situations (Burla, 2017; Keller, 1992; Kostyukevich, 2016; Platonov & Bulatova, 1995; Shynkaruk, 2013).

An important factor in the effective implementation of training process management processes is to ensure the structural relationships of the components of sports training during the period of direct preparation for competitions, with a focus on improving the team level of technical and tactical skills and in competitive microcycles with a focus on correcting the levels of individual and group technical and tactical preparedness.

As a result, the means of sports training, the prerequisites and methods of their implementation, which ensure the effective functioning of the training system, and its modification depending on the goals of operational, current and stage-by-stage management are formed (Tymchyshena, 2008; Vilchkovskyy, 2002).

The process of optimization of the training process and the strategy of training student-athletes of high qualification is based on the systematization and combination into a single set of factors of technical and tactical training, as well as other types of training that ensure effective management of tactical and technical activities of athletes. This, in turn, ensures an increase in the efficiency of the sports training system as a whole (Burla, 2017; Mudryk, Dobrynskyi & Dedelyuk, 2018; Platonov & Bulatova, 1995; Tymchyshena, 2008; Vilchkovskyy, 2002; Shynkaruk, 2013; Prontenko et al., 2019).

Obviously, the variety of team sports games creates certain difficulties in optimizing the training process and the training strategy of highly qualified student-athletes. Most authors agree that methodological approaches should be clearly specified and correspond to the specifics of a particular type of sports games (Vilchkovskyy, 2002; Kostyukevich, 2016). At the same time, it is emphasized that the use of effective methods has the possibility of positive transfer of effective methods from one sport to another, which is a significant reserve for increasing the effectiveness of training aimed at improving the technical and tactical skills of athletes (Burla, 2017; Mudryk, Dobrynskyi & Dedelyuk, 2018; Shynkaruk, 2013).

Methodology

The methods of sports training should be understood as the ways of work of a coach and an athlete, with the help of which the mastery of knowledge, skills, and abilities is achieved, the necessary qualities are developed, and a worldview is formed. For practical purposes, all methods are conditionally divided into three groups: verbal, visual, and practical. In the process of sports training, all these methods are used in various combinations. Each method is not used in a standard way but is constantly adapted to the specific requirements due to the peculiarities of sports training. In the process of selecting methods, it is necessary to ensure that they clearly correspond to the tasks, general didactic principles, as well as special principles of sports training, age and gender characteristics of student-athletes, their qualifications, and preparedness. In sports, where special attention is paid to the connection with practice, as well as due to the specific features of sports activities, the main role is given to practical methods (Mudryk, Dobrynskyi & Dedelyuk, 2018; Tymchyshena, 2008; Vilchkovskyy, 2002; Shynkaruk, 2013).

Verbal methods used in sports training include narration, explanation, lecture, conversation, analysis, and discussion. These forms are most often used in a concise form, especially during the training of qualified athletes, which is facilitated by special terminology, a combination of verbal methods with visual ones. The effectiveness of the training process largely depends on the skillful use of orders and commands, remarks, verbal assessments and explanations (Burla, 2017; Prontenko et al., 2019).

Visual methods used in practice are diverse and to a greater extent determine the effectiveness of training processes. First of all, it is necessary to include the methodically correct display of individual exercises and their elements, which is carried out by a coach or a qualified athlete (Vilchkovskyy, 2002; Kostyukevich, 2016).

In sports practice, the means of demonstration are widely used – educational films, videotape recordings, models of 30 playgrounds and fields for demonstrating tactical schemes, and e-books. The orientation method is also often used. It is necessary to distinguish between both the simplest landmarks that limit the direction of movement, the distance traveled, etc., and the more complex ones – light, sound, and mechanical conductive equipment. This equipment allows the student-athlete to obtain information about tempo rhythms, spatial characteristics of movement, and sometimes provides not only information about the movement, their results, but forced correction (Kostyukevich, 2014; Tymchyshena, 2008; Vilchkovskyy, 2002).

Methods of sports training are divided into general pedagogical, specific, additional methods that are specially developed for the needs of training and sports practice.

General pedagogical methods are aimed at mastering knowledge. They are

divided into methods that provide:

- sensory transmission and assimilation of information (natural display, demonstration, etc.);
- printed transmission, assimilation, and reproduction of information (work with documentary information);
- oral transmission, assimilation, and reproduction of information (lecture, story, explanation, etc.) (Kostyuevych, 2014; 2016).

Specific methods are used for the purpose of mastering motor skills and abilities, as well as for improving motor skills and developing physical qualities.

To master motor skills and abilities, methods are used that involve the formation of a holistic motor skill (holistic exercises), as well as methods that provide for the formation of an integral motor skill in parts with their subsequent connection into one whole (dissected exercises).

To improve motor skills and develop physical qualities, methods are used that provide for accurate rationing and regulation of the load during the exercise: uniform, alternating, repeated, interval, circuit training.

For the same purpose, game and competitive methods are used, which involve the creation of game and competitive circumstances in the process of performing the task (Platonov & Bulatova, 1995; Shynkaruk, 2013).

Additional methods are specially developed in relation to the needs of training and sports practice. They are autogenic training, psychomotor training, training in extreme conditions, etc.

Research results

The training of student-athletes in team sports teams is one of the main areas of physical education. Recently, in the scientific and methodological literature, the problem of training athletes in team sports in higher education institutions has been widely discussed and has become relevant.

The coach of the student team is faced with the main problem: how to properly approach the construction of the educational and training process in the conditions of a higher education institution, which would allow the team to achieve maximum sports results. Today, it is possible to achieve great success in team games only through the intensification of sports training. The process of intensification of sports training involves four stages: team selection, motivation and mobilization, formation of a training program, and activity implementation of the program (Shynkaruk, 2013).

The training of student-athletes is based on the basic provisions of the modern sports training system. The training process itself is considered in the interdependence of goals and objectives, patterns and principles of sports training, as well as the rational use of means and methods of sports training. Sports training is carried out in separate sections, which have independent features, namely the

sides of training: physical, technical, tactical, theoretical, moral and volitional, and integral (Platonov & Bulatova, 1995).

Physical training is aimed at fostering physical abilities (strength, speed-strength, speed, endurance) necessary for sports activities. Physical training is divided into general and special. The tasks of general physical training are the diverse development of physical qualities that are not determined by the specific abilities manifested in the chosen sport. Special physical training solves the problem of fostering specific abilities, thanks to which an athlete excels in his chosen sport. In the process of physical training, athletes increase the level of functional fitness and special training (Burla, 2017).

Technical training is aimed at mastering by the athlete the actions that are performed in the competition, as well as with the help of which the athlete participates in the training process. Technical training is carried out in stages, first athletes master the necessary technical skills in the chosen sport, then they are improved and brought to automatism in training sessions and, finally, implemented in the process of competition (Keller, 1992).

Tactical training should assist the athlete in the implementation of sportsmanship in a competitive environment. In the process of tactical training, the athlete's ability to conduct a sports struggle is formed, taking into account his preparedness, the capabilities of the opponent, external conditions, etc.

Theoretical training is necessary for an athlete to arm himself with knowledge of the theory and methodology of sports training, the content and patterns of athletes' training, the evolution of the development of the sport, etc.

Achieving a high sports result is impossible without proper psychological training, in the process of which moral and *volitional* qualities, the ability to tune in to sports struggle are brought up and improved. Proper psychological preparation allows you to form special psychological functions in an athlete associated with the peculiarities of competitive activity in the chosen sport (Kostyukevich, 2016).

The essence of *integral training* is the combination of skills and abilities, physical qualities, knowledge, experience, and level of preparedness, which allows to carry out comprehensive (integral) training. Integral training is especially important for highly qualified athletes. Planning the training process of athletes, taking into account individual aspects of training, allows you to more systematically select the means and methods of training, as well as determine the criteria for monitoring the level of athletes' preparedness (Kostyukevich, 2014).

Sports training is carried out on the basis of general pedagogical principles and principles of methods of physical education and sports. The modern system of athletes' training is carried out on the following basic principles based on a scientific and methodological basis:

- focus on the maximum possible achievements;
- in-depth specialization and individualization;

- unity of general and special training;
- continuity of the training process;
- unity of gradualness and maximum increase in training loads;
- undulation of load dynamics.

Focus on the maximum possible achievements. This principle most fully reflects the essence of sport – winning the competition. Therefore, it is quite natural for each athlete to try to go as far as possible along the path of improvement, which is stimulated by the very system of sports competitions and a single sports classification (Mudryk, Dobrynskyi & Dedelyuk, 2018).

In-depth specialization and individualization. The regularity of modern sports is the impossibility of achieving the maximum possible result without adhering to the principle of in-depth specialization and individualization. The use of this principle is also associated with the natural endowment of a particular athlete, his inclination to a certain specific activity (Shynkaruk, 2013).

Unity of general and special training. The interdependence of general and special training is due to the inseparability and unconditional necessity of each of the aspects of sports training. Special training is based on general training, that is, the content of special training depends on the prerequisites created by general training, and the content of general training is determined by the features of sports specialization (Tymchyshena, 2008).

Continuity of the training process. The main essence of this principle is that sports training is built as a year-round and perennial training system. The connection between the links of the training process is provided by a continuous sequence of urgent delayed and cumulative effects of training. The interval between classes is determined on the basis of the patterns of recovery and improvement of performance (Vilchkovskyy, 2002).

Unity of gradualness and maximum increase in training loads. The principle reflects the patterns of adaptation to training and competitive loads. In the process of long-term training, the athlete is presented with higher requirements at each subsequent stage (Platonov & Bulatova 1995).

Undulation of load dynamics. The principle is due to the need for rest after exertion. A progressive increase in load at certain stages comes into a certain contradiction with changes in the body, which are caused by the processes of adaptation to loads and the need for rest and biological rearrangement of the body.

As a result of the study of scientific and pedagogical literature and the analysis of the methodology of the training process of student-athletes in team sports, we have developed the content of the training process of highly qualified athletes in team sports, presented in Figure 1.

The content of the training process includes sports training, which consists of physical, technical, tactical, and game training, as well as theoretical training (the basics of sports theory, patterns of sports training), psychological training (formation of motivation for sports, volitional training, ideomotor training,

regulation of mental tension, management of starting states, improvement of response and tolerance to emotional stress), competitions (preparatory, control, leading, selection, basic), restorative means (pedagogical, medical and biological, psychological), control (in-depth, stage, current, operational).

The implementation of the content of the training process and the strategy of training student-athletes of high qualification in team sports solve, on the one hand, the problem of improving the qualities of special physical training of student-athletes and their technical and tactical skills and, on the other hand, the task of direct preparation for competitive activities. In this regard, game training acts as a kind of synthesis of past training work and a forecast of future competitive activity, and the main means of game training are primarily a variety of game training tasks and physical exercises, which are presented in Figure 1.

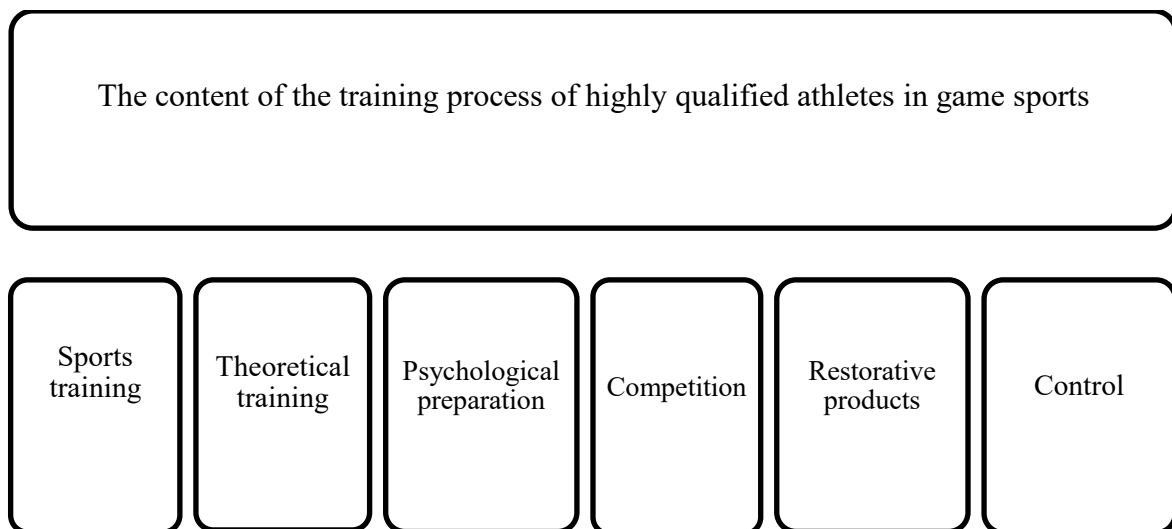


Figure 1 The content of the training process of highly qualified athletes in team sports (created by the author)

Conclusions and discussion

Thus, on the basis of theoretical and practical analysis of the problem under study, we substantiated and experimentally tested the theoretical and methodological foundations of optimizing the training process and the strategy of training student-athletes of high qualification in team sports. To optimize the training process and the strategy of training student-athletes of high qualification in team sports, we used the following methods: verbal, visual, and practical. Also, we substantiate the use of the following methods of sports training: general pedagogical, specific, and additional methods that are specially developed for the needs of sports practice.

The content of the training process of highly qualified athletes in team sports has been developed, which allows purposeful planning and adjustment of tactics and strategy for training student-athletes in team sports on an objective basis, can

be used in higher educational institutions that train student-athletes, and can also be concluded in textbooks and methodological recommendations.

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